09704968

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=> d his

     (FILE 'HOME' ENTERED AT 13:40:13 ON 18 MAR 2004)

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L3             28 S L1 SSS FULL

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L4             21 S L3

     FILE 'REGISTRY' ENTERED AT 13:42:52 ON 18 MAR 2004

     FILE 'CAPLUS' ENTERED AT 13:43:31 ON 18 MAR 2004
L5             12 S L4 NOT (CADMIUM OR ZINC OR COPPER)

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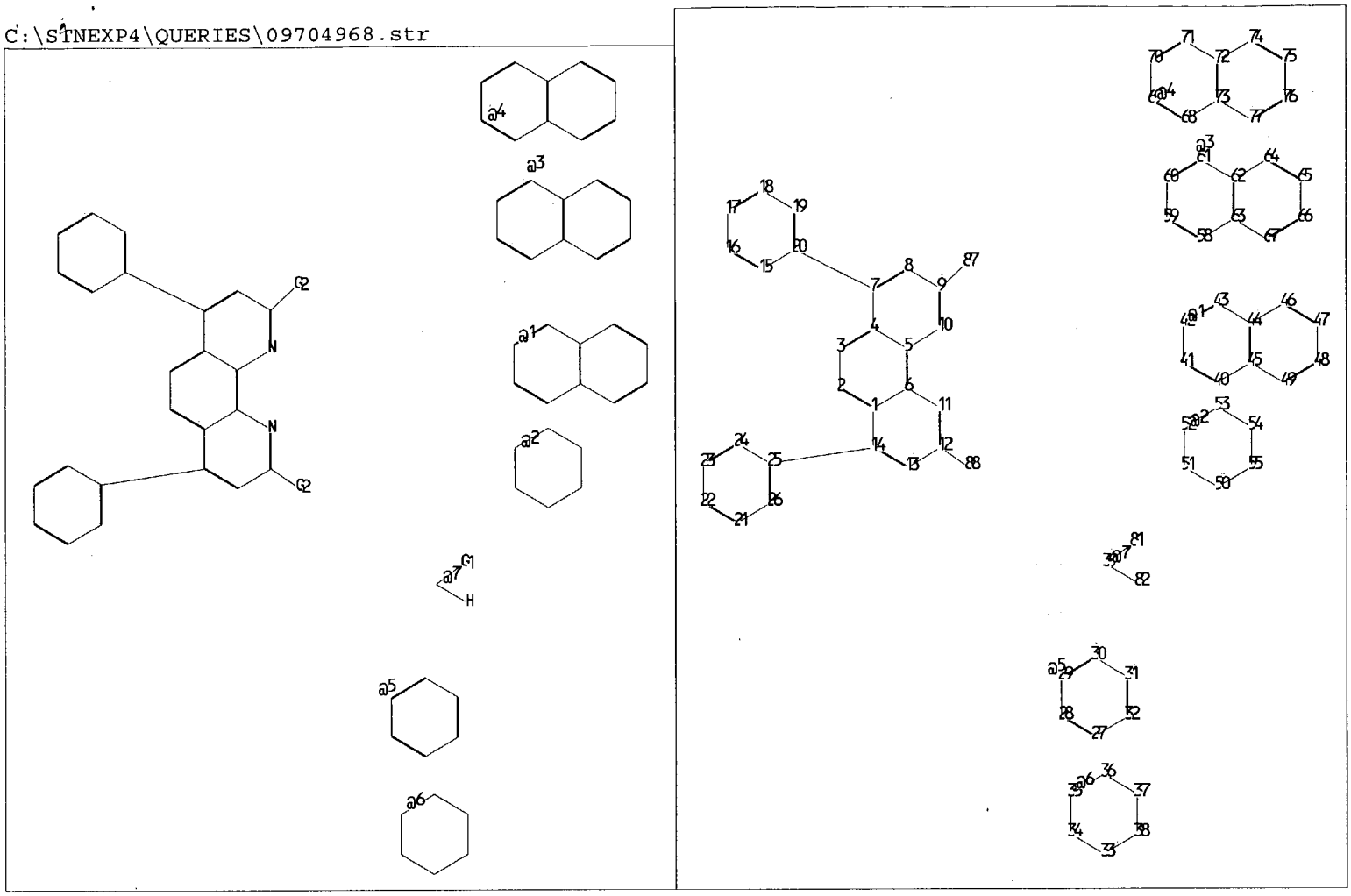

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39 81 82 87 88
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
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50 51 52 53 54 55 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74
75 76 77
chain bonds :
7-20 9-87 12-88 14-25 39-81 39-82
ring bonds :
1-2 1-6 1-14 2-3 3-4 4-5 4-7 5-6 5-10 6-11 7-8 8-9 9-10 11-12 12-13 13-14
15-16 15-20 16-17 17-18 18-19 19-20 21-22 21-26 22-23 23-24 24-25 25-26 27-28
27-32 28-29 29-30 30-31 31-32 33-34 33-38 34-35 35-36 36-37 37-38 40-41 40-45
41-42 42-43 43-44 44-45 44-46 45-49 46-47 47-48 48-49 50-51 50-55 51-52 52-53
53-54 54-55 58-59 58-63 59-60 60-61 61-62 62-63 62-64 63-67 64-65 65-66 66-67
68-69 68-73 69-70 70-71 71-72 72-73 72-74 73-77 74-75 75-76 76-77
exact/norm bonds :
9-87 12-88 33-34 33-38 34-35 35-36 36-37 37-38 39-81 50-51 50-55 51-52 52-53
53-54 54-55
exact bonds :
7-20 14-25 39-82
normalized bonds :
1-2 1-6 1-14 2-3 3-4 4-5 4-7 5-6 5-10 6-11 7-8 8-9 9-10 11-12 12-13 13-14
15-16 15-20 16-17 17-18 18-19 19-20 21-22 21-26 22-23 23-24 24-25 25-26 27-28
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46-47 47-48 48-49 58-59 58-63 59-60 60-61 61-62 62-63 62-64 63-67 64-65 65-66
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G1:CH3,[*1],[*2],[*3],[*4]

G2:[*5],[*6],[*7]

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Match level :
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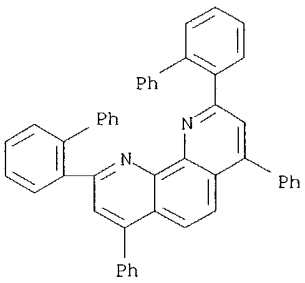
09704968

=> d 1-12 bib abs hitstr

L5 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:930086 CAPLUS
DN 139:388305
TI High-efficiency organic electroluminescent devices containing naphthacene and/or anthracene derivatives
IN Ara, Kensuke; Inoue, Tetsuji; Ogawa, Hiromitsu
PA TDK Corporation, Japan
SO Jpn. Kokai Tokkyo Koho, 258 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003338377	A2	20031128	JP 2003-65672	20030311
PRAI JP 2002-65472	A	20020311		

OS MARPAT 139:388305
AB The devices, showing high purity of emission color, have electron-transporting layers containing naphthacene and/or anthracene derivs. and electron-injecting layers which may contain phenanthroline derivs. (Markush given). The devices may have host-guest emission layers containing naphthacene derivs. as the host materials satisfying dipole moment ≤1.0 debye.
IT **625121-77-9**
RL: DEV (Device component use); USES (Uses)
(electron-injecting layers; high-efficiency organic LED containing naphthacene and/or anthracene derivs. as carrier transporters)
RN 625121-77-9 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis[1,1'-biphenyl]-2-yl-4,7-diphenyl- (9CI) (CA INDEX NAME)



L5 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:874705 CAPLUS
DN 139:371627
TI Electroluminescent materials based on metal complexes bearing a quadridentate pyridine-based ligand for use as emissive dopants in organic light-emitting devices
IN Che, Chi-Ming
PA Peop. Rep. China
SO U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2003205707	A1	20031106	US 2002-137272	20020501
US 6653654	B2	20031125		
WO 2003093283	A1	20031113	WO 2003-CN221	20030327

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,

NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-137272 A 20020501

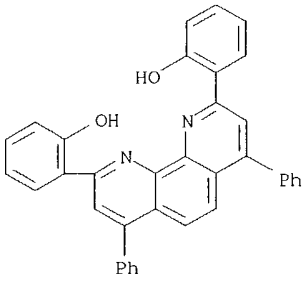
OS MARPAT 139:371627

AB Electroluminescent layers in a heterostructure organic light-emitting device are described which comprise at least a host material and an emissive mol., present as a dopant in the host material, where the emissive mol. is selected from metal complexes bearing a quadridentate ligand containing at least one pyridine or substituted pyridine group. Methods for the preparation of the light-emitting materials are discussed and yellow-emitting electroluminescent devices employing the materials are demonstrated.

IT **553677-75-1P**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(electroluminescent materials based on metal complexes bearing quadridentate pyridine-based ligand prepared using)

RN 553677-75-1 CAPLUS

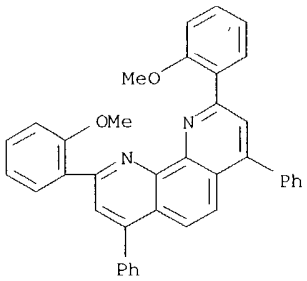
CN Phenol, 2,2'-(4,7-diphenyl-1,10-phenanthroline-2,9-diyl)bis- (9CI) (CA INDEX NAME)



IT **553677-79-5**
RL: RCT (Reactant); RACT (Reactant or reagent)
(electroluminescent materials based on metal complexes bearing quadridentate pyridine-based ligand prepared using)

RN 553677-79-5 CAPLUS

CN 1,10-Phenanthroline, 2,9-bis(2-methoxyphenyl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



L5 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:758034 CAPLUS

DN 139:283131

TI Rhenium compounds for an organic electroluminescent device

IN Christou, Victor; Watkins, Scott Edward

PA Isis Innovation Limited, UK

SO PCT Int. Appl., 29 pp.
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003079737	A2	20030925	WO 2003-GB1189	20030317

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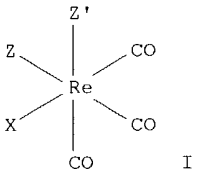
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2002-6169 A 20020315

GI



I

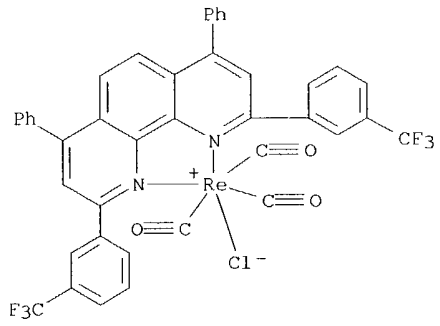
AB An organic electroluminescent device is described which comprises a compound having a skeleton (I): which skeleton can comprise ≥1 addnl. aromatic rings, wherein each of Z and Z', which may be the same or different, represents a N-containing aromatic ring such that the Z and Z' rings either together form a conjugated system, optionally with ≥1 addnl. aromatic rings, or ≥1 of Z and Z' form a conjugated system with ≥1 addnl. aromatic rings to which Z and Z' is attached, with the proviso that, (a) when the 2 said rings are pyridyl rings and are connected to 1 another ortho to the N atoms then (i) ≥1 said ring is substituted by ≥1 electron withdrawing substituent which is a hydrocarbon aryl group or (ii) ≥1 said ring is fused to another aromatic ring to which the other pyridyl ring is not fused or (iii) the 2 said rings together form a phenanthroline ring system which is substituted by ≥1 electron withdrawing substituent which is in the 2, 4, 5, 6, 7 or 9 position, or (b) the 2 said rings are such that either (i) ≥1 of them contains ≥1 further N atom or (ii) they are fused to another aromatic ring which contains ≥1 N atom, and X represents an anionic or neutral coligand.

IT **606093-24-7P**

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(preparation and IR and luminescence and NMR spectra and electrochem. redox and electroluminescent device of)

RN 606093-24-7 CAPLUS

CN Rhenium, tricarbonylchloro[4,7-diphenyl-2,9-bis[3-(trifluoromethyl)phenyl]-1,10-phenanthroline-κN1,κN10]- (9CI) (CA INDEX NAME)



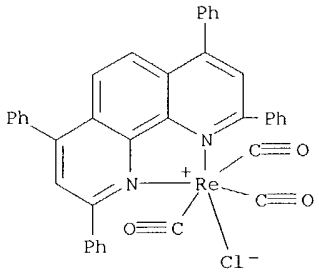
IT **606093-20-3P**

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(preparation and IR and luminescence and NMR spectra and electrochem. redox of)

RN 606093-20-3 CAPLUS

CN Rhenium, tricarbonylchloro(2,4,7,9-tetraphenyl-1,10-phenanthroline-κN1,κN10)- (9CI) (CA INDEX NAME)



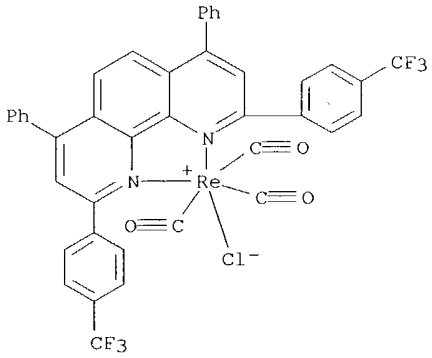
IT **606093-23-6P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and IR and luminescence and NMR spectra and electrochem. redox of)

RN 606093-23-6 CAPLUS

CN Rhenium, tricarbonylchloro[4,7-diphenyl-2,9-bis[4-(trifluoromethyl)phenyl]-1,10-phenanthroline-κN1,κN10]- (9CI) (CA INDEX NAME)



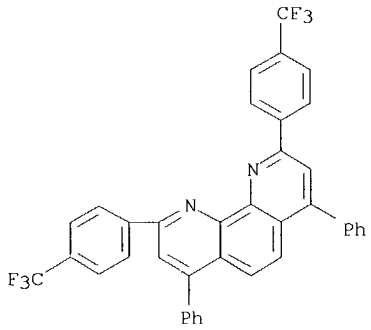
IT **605686-78-0P 605686-80-4P**

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and NMR and reaction with rhenium pentacarbonyl chloride)

RN 605686-78-0 CAPLUS

CN 1,10-Phenanthroline, 4,7-diphenyl-2,9-bis[4-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



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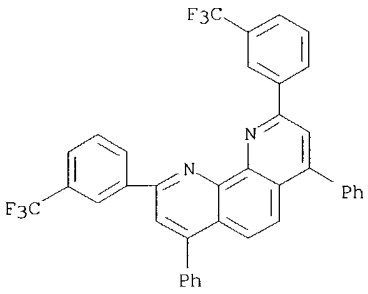
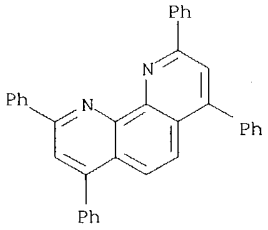
RN 605686-80-4 CAPLUS
CN 1,10-Phenanthroline, 4,7-diphenyl-2,9-bis[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



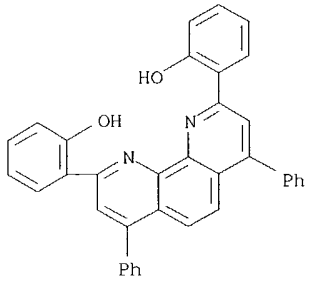
IT **51786-73-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with rhenium pentacarbonyl chloride)
RN 51786-73-3 CAPLUS
CN 1,10-Phenanthroline, 2,4,7,9-tetraphenyl- (9CI) (CA INDEX NAME)



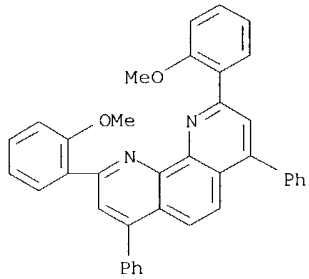
L5 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:246946 CAPLUS
DN 139:94233
TI Structural, photophysical, and electrophosphorescent properties of platinum(II) complexes supported by tetradentate N2O2 chelates
AU Lin, Yong-Yue; Chan, Siu-Chung; Chan, Michael C. W.; Hou, Yuan-Jun; Zhu, Nianyong; Che, Chi-Ming; Liu, Yu; Wang, Yue
CS Department of Chemistry and HKU-CAS Joint Laboratory on New Materials, The University of Hong Kong, Hong Kong SAR, Peop. Rep. China
SO Chemistry--A European Journal (2003), 9(6), 1263-1272
CODEN: CEUJED; ISSN: 0947-6539
PB Wiley-VCH Verlag GmbH & Co. KGaA
DT Journal
LA English
OS CASREACT 139:94233
AB The authors present an examination of the structural and photophys. characteristics of [PtL] (H2L = 2,9-bis(2'-hydroxyphenyl)-4,7-diphenyl-1,10-phenanthroline (1), 6,6'-bis(2''-hydroxyphenyl)-4,4'-bis(tert-butyl)-2,2'-bipyridine (2)) that are tetradentate relatives of the quinolinolato (q) ligand. These neutral derivs. display high thermal stability (>400° in N2). While the crystal lattice in 1 consists of (head-to-tail)-interacting dimers, mols. of 2 are arranged into infinitely stacked planar sheets with possible π-π interactions but no close Pt···Pt contacts. Complexes 1 and 2 exhibit moderately intense low-energy UV/visible absorptions around λ = 400-500 nm that undergo neg. solvatochromic shifts. Both derivs. are highly luminescent in solution at 298 K with emission lifetimes in the μs range, and mixed 3[1 → π*(diimine)] (1 = lone pair/phenoxide) and 3[Pt(d)→π*(diimine)] charge-transfer states are tentatively assigned. The excited-state properties of 2 are also studied by time-resolved absorption spectroscopy and by quenching expts. with pyridinium acceptors to estimate the excited-state redox potential. These emitters were employed as electrophosphorescent dopants in multilayer OLEDs. Differences between the brightness, color, and overall performance

of devices incorporating 1 and 2 are attributed to the influence of the diimine substituents.

IT **553677-75-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and complexation with platinum)
RN 553677-75-1 CAPLUS
CN Phenol, 2,2'-(4,7-diphenyl-1,10-phenanthroline-2,9-diyl)bis- (9CI) (CA INDEX NAME)



IT **553677-79-5P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactant for preparation of bis(2'-hydroxyphenyl)-4,7-diphenyl-1,10-phenanthroline)
RN 553677-79-5 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis(2-methoxyphenyl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:747696 CAPLUS
DN 135:311013
TI Write-once optical record medium
IN Oyamada, Mitsuaki; Iwamura, Takashi; Tamura, Shinichiro
PA Sony Corporation, Japan
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001074600	A1	20011011	WO 2001-JP2903	20010403
	W: CN, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	EP 1199184	A1	20020424	EP 2001-917814	20010403
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	US 2002150837	A1	20021017	US 2002-9108	20020422
PRAI	JP 2000-100948	A	20000403		

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WO 2001-JP2903 W 20010403
OS MARPAT 135:311013
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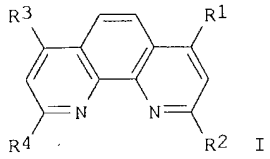
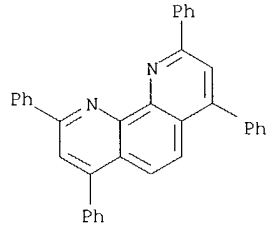


I

AB A write-once optical record medium comprises a record layer and a light-transmitting protective layer formed in order on a support, and recording and reproduction are performed by irradiating the light-transmitting protective layer with a laser beam of a wavelength of 380-450 nm, wherein the wavelength λmax at which the light absorption coefficient of the record layer reaches a peak is λmax<370 nm. The recording layer contains a compd selected from 4,4'-diaminobiphenyls, tris(4-aminophenyl)amines, fullerenes, and I [R1-4 = (un)substituted Ph, naphthyl, biphenyl]. The recording medium shows excellent read-out stability.
IT **51786-73-3**
RL: TEM (Technical or engineered material use); USES (Uses)
(write-once optical recording medium containing)
RN 51786-73-3 CAPLUS
CN 1,10-Phenanthroline, 2,4,7,9-tetraphenyl- (9CI) (CA INDEX NAME)



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:338138 CAPLUS
DN 134:346298
TI Organic electroluminescent device
IN Kijima, Yasunori; Shibanuma, Tetsuo; Asai, Nobutoshi; Tamura, Shinichiro
PA Sony Corporation, Japan
SO Eur. Pat. Appl., 54 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1097981	A2	20010509	EP 2000-123744	20001031
	EP 1097981	A3	20030924		
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	JP 2001135482	A2	20010518	JP 1999-312070	19991102
	US 6524728	B1	20030225	US 2000-705192	20001102
PRAI	JP 1999-312070	A	19991102		

OS MARPAT 134:346298
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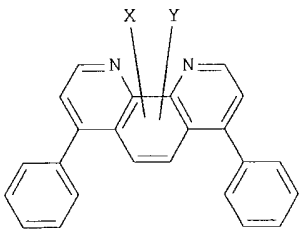
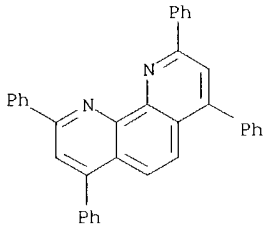


I

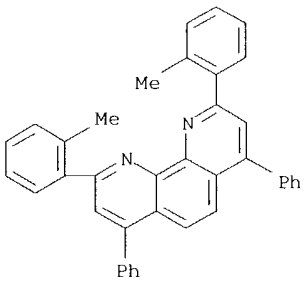
AB Organic electroluminescent devices are described in which a portion (e.g., a hole-blocking layer) contacting the emission region contains a bathophenanthroline derivative are described by the general formula I (X and Y = independently selected H, (un)substituted alkyl, (un)substituted cycloalkyl, (un)substituted aryl, (un)substituted amino, halogen, nitro, cyano, or hydroxyl groups with the restrictions that a H or Me group may not be provided at the 2 or 9 positions and that at least one of the groups is contained at an arbitrary position).

IT **51786-73-3 338732-41-5 338732-42-6**
RL: DEV (Device component use); USES (Uses)
(organic electroluminescent devices with bathophenanthroline derivative hole-blocking layers)

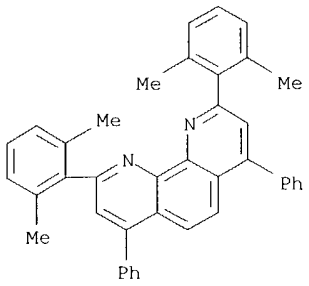
RN 51786-73-3 CAPLUS
CN 1,10-Phenanthroline, 2,4,7,9-tetraphenyl- (9CI) (CA INDEX NAME)



RN 338732-41-5 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis(2-methylphenyl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



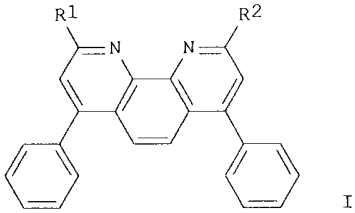
RN 338732-42-6 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis(2,6-dimethylphenyl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



L5 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:338137 CAPLUS
DN 134:346297
TI Bathophenanthroline compound and process for preparing same
IN Shibanuma, Tetsuo; Kijima, Yasunori; Asai, Nobutoshi; Tamura, Shinichiro
PA Sony Corporation, Japan
SO Eur. Pat. Appl., 64 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1097980	A2	20010509	EP 2000-123668	20001030
	EP 1097980	A3	20030924		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001131174	A2	20010515	JP 1999-312071	19991102
PRAI	JP 1999-312071	A	19991102		

OS MARPAT 134:346297
GI

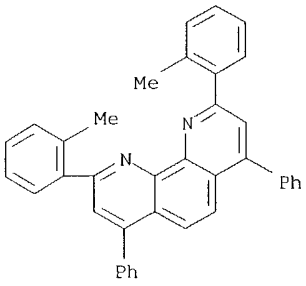


I

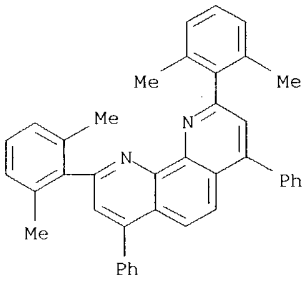
AB Bathophenanthroline compds. are described by the general formula I (R1 and R2 = independently selected linear, branched, or cyclic (un)saturated (un)substituted hydrocarbon groups provided that ≥1 of R1 and R2 has ≥2 carbon atoms; or R1 and R2 = independently selected (un)substituted aryl groups). Methods for preparing the compds. are described which entail carrying out a nucleophilic substitution reaction between bathophenanthroline and an appropriate organolithium compound The compds. may be used as organic layers (e.g., charge transport layers) in electroluminescent devices.

IT **338732-41-5P 338732-42-6P 338734-79-5P**
338734-81-9P 338734-82-0P 338734-83-1P
338734-84-2P 338734-86-4P 338734-87-5P
338734-88-6P
RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)
(bathophenanthroline derivs. and their preparation and use in electroluminescent devices)

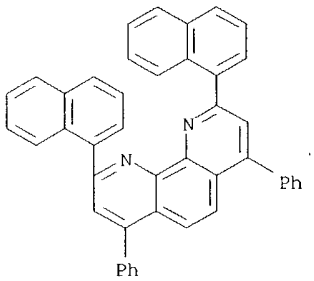
RN 338732-41-5 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis(2-methylphenyl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



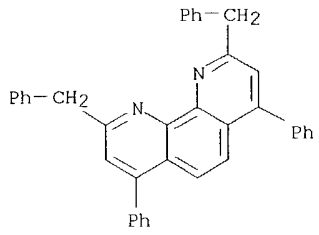
RN 338732-42-6 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis(2,6-dimethylphenyl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



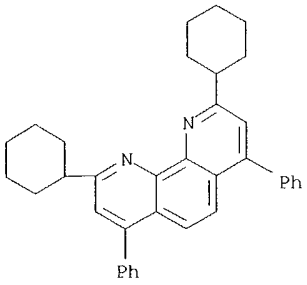
RN 338734-79-5 CAPLUS
CN 1,10-Phenanthroline, 2,9-di-1-naphthalenyl-4,7-diphenyl- (9CI) (CA INDEX NAME)



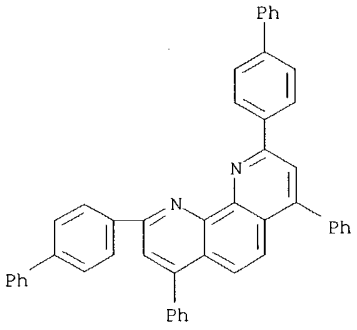
RN 338734-81-9 CAPLUS
CN 1,10-Phenanthroline, 4,7-diphenyl-2,9-bis(phenylmethyl)- (9CI) (CA INDEX NAME)



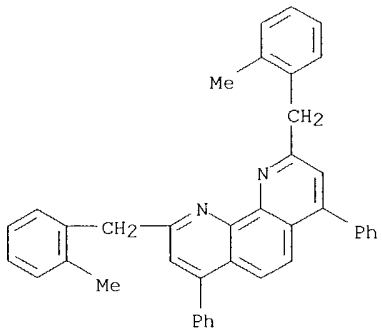
RN 338734-82-0 CAPLUS
CN 1,10-Phenanthroline, 2,9-dicyclohexyl-4,7-diphenyl- (9CI) (CA INDEX NAME)



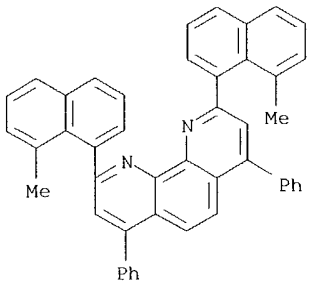
RN 338734-83-1 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis([1,1'-biphenyl]-4-yl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



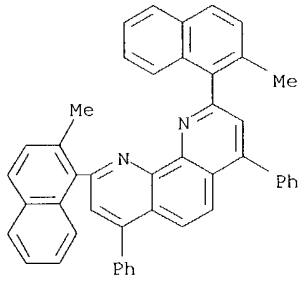
RN 338734-84-2 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis[(2-methylphenyl)methyl]-4,7-diphenyl- (9CI) (CA INDEX NAME)



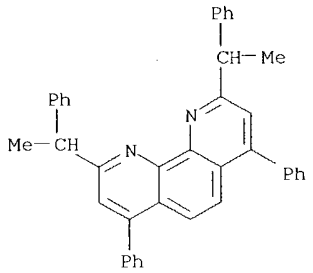
RN 338734-86-4 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis(8-methyl-1-naphthalenyl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



RN 338734-87-5 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis(2-methyl-1-naphthalenyl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



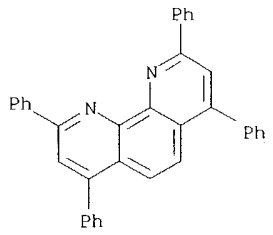
RN 338734-88-6 CAPLUS
CN 1,10-Phenanthroline, 4,7-diphenyl-2,9-bis(1-phenylethyl)- (9CI) (CA INDEX NAME)



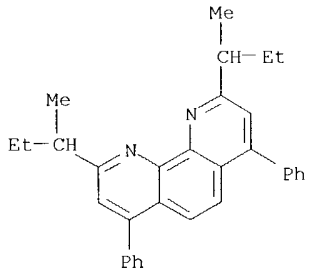
L5 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:22551 CAPLUS
DN 120:22551
TI Lithium ion-selective electrodes based on 1,10-phenanthroline derivatives
AU Sugihara, Hideki; Okada, Tatsuhiro; Hiratani, Kazuhisa
CS Natl. Inst. Mater. Chem. Res., Higashi, 305, Japan
SO Analytical Sciences (1993), 9(5), 593-7
CODEN: ANSCEN; ISSN: 0910-6340
DT Journal
LA English
AB The preparation of 1,10-phenanthroline derivs. and 4,7-diphenyl-1,10-phenanthroline derivs. as neutral carriers for ion-selective electrodes and the properties of the title electrodes are described in detail. A log KLi,NaPot value of -3.1 was obtained for a Li+-selective PVC membrane electrode based on 2,9-dibutyl-1,10-phenanthroline. This value is superior to those reported so far. The electrodes also showed excellent selectivity coeffs. for Li+ relative to K+, Mg2+, and Ca2+. The effects of substituents at the 2- and 9-positions of the carriers on the selectivity are discussed.
IT **51786-73-3P 151862-67-8P**

RL: PREP (Preparation)
(preparation and NMR and comparison of, as neutral carrier in lithium ion-selective electrode)

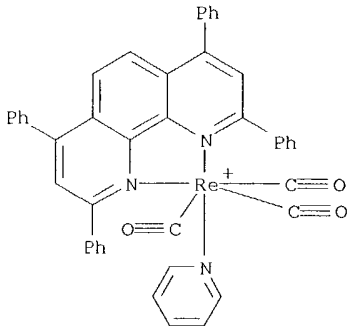
RN 51786-73-3 CAPLUS
CN 1,10-Phenanthroline, 2,4,7,9-tetraphenyl- (9CI) (CA INDEX NAME)



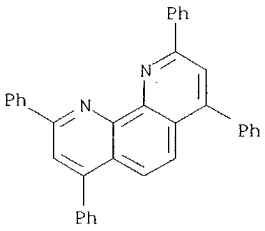
RN 151862-67-8 CAPLUS
CN 1,10-Phenanthroline, 2,9-bis(1-methylpropyl)-4,7-diphenyl- (9CI) (CA INDEX NAME)



L5 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:658750 CAPLUS
DN 119:258750
TI Luminescence of rhenium(I) complexes with highly sterically hindered α-diimine ligands
AU Zipp, Arden P.; Sacksteder, LouAnn; Streich, Julie; Cook, Andrew; Demas, J. N.; DeGraff, B. A.
CS Chem. Dep., State Univ. New York, Cortland, NY, 13045, USA
SO Inorganic Chemistry (1993), 32(24), 5629-32
CODEN: INOCAJ; ISSN: 0020-1669
DT Journal
LA English
AB Several new ReL(CO)3py+ (py = pyridine, L = substituted phen) complexes were synthesized; they form easily, exhibit excellent luminescent properties and show promise as sensors. The O2 quenching consts., luminescence temperature variations, and metal-ligand charge-transfer state energies were investigated. Ph substituents can be used to tune excited-state properties in useful ways and in the 4-, 7-, and 5-positions should make attractive intercalative DNA binders.
IT **151269-14-6**
RL: PRP (Properties)
(luminescence lifetime and spectra and charge-transfer excited states of)
RN 151269-14-6 CAPLUS
CN Rhenium(1+), tricarbonyl(pyridine)(2,4,7,9-tetraphenyl-1,10-phenanthroline-N1,N10)-, (OC-6-33)- (9CI) (CA INDEX NAME)



L5 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1983:179244 CAPLUS
DN 98:179244
TI Direct synthesis of disubstituted aromatic polyimine chelates
AU Dietrich-Buchecker, C. O.; Marnot, P. A.; Sauvage, J. P.
CS Inst. Chim., Univ. Louis Pasteur, Strasbourg, 67000, Fr.
SO Tetrahedron Letters (1982), 23(50), 5291-4
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
OS CASREACT 98:179244
AB Treatment of 1,10-phenanthroline with alkyl- or aryllithiums, followed by hydrolysis and rearomatization with MnO2 gave 2,9-disubstituted products in high yield. E.g., treatment of 1,10-phenanthroline with PhLi in 3:1 C6H6/Et2O followed by hydrolysis and MnO2 oxidation gave 2,9-diphenyl-1,10-phenanthroline in 70% yield. The method was extended to other aromatic polyimines, e.g. 2,2'-bipyridine.
IT **51786-73-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by direct regiospecific phenylation)
RN 51786-73-3 CAPLUS
CN 1,10-Phenanthroline, 2,4,7,9-tetraphenyl- (9CI) (CA INDEX NAME)



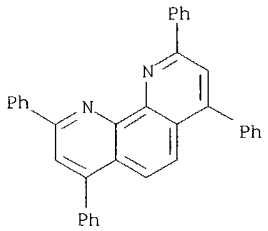
L5 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1974:95913 CAPLUS
DN 80:95913
TI 1,10-Phenanthroline derivatives
IN Zak, Bohumil
SO Czech., 3 pp.
CODEN: CZXXA9
DT Patent
LA Czech
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CS 150747	B	19730917	CS 1971-3494	19710812
PRAI CS 1971-3494		19710812		

GI For diagram(s), see printed CA Issue.
AB The title compds. I (R1, R3 = H, Me, Ph; R2, R4 = H, Me) were prepared by condensation of R1CH:CR2COR3 with o-phenylenediamine (II) or 4,5-dimethyl-1,2-phenylenediamine (III). E.g., 1.46 kg II was treated with 4 kg PhCOCH:CHMe in HCl solution at 90-100° to give 500 g 2,9-dimethyl-4,7-diphenyl-1,10-phenanthroline. Analogously, III reacted

with MeCH:CHCHO and CH2:CMe(OEt)2 to give, resp., 2,5,6,9-tetramethyl- and 3,5,6,8-tetramethyl-1,10-phenanthroline.

IT **51786-73-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 51786-73-3 CAPLUS
CN 1,10-Phenanthroline, 2,4,7,9-tetraphenyl- (9CI) (CA INDEX NAME)



L5 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1956:48773 CAPLUS
DN 50:48773
OREF 50:9422f-i,9423a-e
TI Substituted 1,10-phenanthrolines. VIII. 2- and 3-Phenyl derivatives
AU Case, Francis H.; Sasin, Richard
CS Temple Univ., Philadelphia, PA
SO Journal of Organic Chemistry (1955), 20, 1330-6
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA Unavailable
AB cf. C.A. 49, 10959h. Glycerol (18.4 g.) added to 11 g. 8-amino-2-phenylquinoline (I), 9 g. H3AsO4, 24 cc. concentrated H2SO4, and 8 cc. H2O at 100°, the mixture heated 2 hrs. at 140°, cooled, neutralized with NaOH, and the dried precipitate extracted with boiling C6H6 gives 23.4% 2-phenyl-1,10-phenanthroline, m. 104°. Adding 16 g. PhCH:CHCHO to 14.6 g. I, 18 g. H3AsO4, and 40 cc. 85% H3PO4 at 100° at such a rate that the temperature does not rise above 120°, heating the mixture 2 hrs. at 120-35°, pouring it onto ice, and neutralizing it with KOH gives 1.2 g. 2,9-diphenyl-1-10-phenanthroline, m. 185-6°. Refluxing 63 g. HOCPh(CH2Cl)2 and 56 g. anhydrous NaOAc in 85 cc. absolute EtOH, pouring the mixture onto ice, extracting with Et2O, and distilling the residue of the Et2O extract gives 32.5 g. crude HOCPh(CH2OAc)2, b10 150-60°, which (32 g.), added slowly to 13.5 g. o-O2NC6H4NH2, 13.5 g. H3AsO4, 42 cc. concentrated H2SO4, and 12 cc. H2O with stirring below 120°, and the mixture heated 2 hrs. at 120-30°, poured onto ice, made alkaline, and extracted with C6H6 gives 1.2 g. 8-nitro-3-phenylquinoline (II), m. 110-20°. II is also obtained in 3.5-g. yield from a suspension of 9 g. paraformaldehyde in 55.2 g. of a 50% solution of PhCH2CHO in EtOH added to 13.8 g. o-O2NC6H4NH2, 11.5 g. H3AsO4, and 10 g. anhydrous ZnCl2 in 200 cc. concentrated HCl, and the mixture worked up in the usual way. Adding 6.5 g. Fe powder to 10.5 g. II in 100 cc. 50% AcOH at 60°, heating the mixture 1 hr. on a steam bath, neutralizing it with NaOH, and extracting with Et2O gives 7.5 g. 8-amino-3-phenylquinoline (III), m. 74-5° (Ac derivative, m. 147-8°). Adding 3.8 cc. acrolein to 5.8 g. III, 8 g. H3AsO4, and 40 cc. 85% H3PO4 at 100° and heating the mixture 1 hr. at 100° gives 1.7 g. 3-phenyl-1,10-phenanthroline (IV) [monopicrate (IVa), m. 221-2°; mono-HCl salt, prepared from IVa, m. 210-11°]. Keeping 43.2 g. 8-aminoquinoline, 57.6 g. EtO2CCHPhCHO (V), and 2 drops AcOH 3 days in a vacuum desiccator, adding the oil formed to 300 cc. refluxing Dowtherm A (VI), and refluxing it 2 hrs. gives 42% 4-hydroxy-3-phenyl-1,10-phenanthroline, m. 235-6° which (10.88 g.), refluxed 3 hrs. with 20 g. PCl5 in 30 cc. POCl3, gives 25.9% 4-Cl analog, m. 149-50°; 4-Br analog (VII), prepared similarly with PBr3, 22.3%, needles, m. 158-9°. Reduction of 3 g. VII with 1 g. Raney Ni in 10 cc. 10% NaOH and 50 cc. absolute EtOH 2 hrs. gives IV, bl 235-8° (picrate, m. 221-2°). Treating 10.8 g. o-C6H4(NH2)2 with 38.4 g. V and 2 drops AcOH 3 days in a vacuum desiccator, and refluxing the oil formed in 300 cc. VI 12 hrs. gives 33.5% 4,7-dihydroxy-3,8-diphenyl-1,10-phenanthroline, m. 337-8°, which, treated with PCl5-POCl3, yields 26.7% 4,7-di-Cl analog, m. 235-6°; 4,7-di-Br analog (VIII), 18.4%, m. 240-1°. Reduction of 2.5 g. VIII with Raney Ni gives 59% 3,8-diphenyl-1,10-phenanthroline, m. 190-1°. Keeping 22.2 g.

8-amino-6-phenylquinoline, 19.2 g. V, and 2 drops AcOH 3 days in a vacuum desiccator and refluxing the reaction product in VI gives 29.3% 4-hydroxy-3,5-diphenyl-1,10-phenanthroline, m. 248-9°. Adding slowly 15 g. BzCH2CH2Cl to 13.5 g. 8-amino-4-phenylquinoline, 17 g. H3AsO4, and 57 g. 85% H3PO4 at 100° and heating the mixture 2 hrs. at 120° gives 58.8% 4,7-diphenyl-1,10-phenanthroline (IX), m. 216-17°, which is also obtained in 16.8% yield by a Yale-type Skraup reaction (C.A. 42, 2976a). Adding 0.6 of a PhLi solution (from 1.1 g. Li and 14 g. PhBr) in 50 cc. Et2O to 3.5 g. 4,7-dimethyl-1,10-phenanthroline (X) in 75 cc. C6H6 in a N atmospheric, distilling off the Et2O, refluxing the C6H6 solution 3 hrs., adding 15 cc. PhNO2, distilling off the C6H6, heating the mixture 4 hrs. at 100°, and removing the PhNO2 by steam distillation gives 33% 4,7-dimethyl-2,9-diphenyl-1,10-phenanthroline, m. 259-60°. In a similar experiment with X replaced by IX, 29.3% 2,4,7,9-tetraphenyl-1,10-phenanthroline, m. 318-19°, is obtained.

IT **51786-73-3**, 1,10-Phenanthroline, 2,4,7,9-tetraphenyl-
(preparation of)

RN 51786-73-3 CAPLUS

CN 1,10-Phenanthroline, 2,4,7,9-tetraphenyl- (9CI) (CA INDEX NAME)